

REMARKS

The Office Action of April 23, 2004 has been reviewed and the Examiner's comments carefully considered. The present Amendment amends claim 1 in accordance with the originally-filed specification. Support for these amendments can be found, for example, in paragraph [0007] and Figs. 1-4 of the published application, namely Publication No. US 2002/0073520 A1. In addition, claims 13 and 14 are cancelled by the foregoing Amendment. Accordingly, claims 1-10 are pending in this application and claim 1 is in independent form.

Initially, the Examiner objected to the specification as failing to provide proper antecedent basis for the claimed subject matter. This objection also relates to the Examiner's rejection of claims 1-10, 13 and 14 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner alleges that the claims of the present application contain subject matter that was not described in the specification in such a way to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The Examiner makes this rejection specifically with respect to claims 1, 13 and 14, all of which describe the particular geometric dimensions of the region of greater thickness on the barrel. The limitations in claim 1 with respect to the "angle" of the region of greater thickness, and claims 13 and 14 in their entirety, have been cancelled by the foregoing Amendment. Therefore, the Examiner's objections to the specification and Section 112, first paragraph, rejection, while noted, have been made moot by these amendments. Therefore, Applicant respectfully requests withdrawal of these objections and rejections.

Of pending claims 1-10, the Examiner has rejected claims 1, 2 and 5 under 35 U.S.C. § 102(b) as being anticipated by German Patent No. 296 10 293 to Hagemann (hereinafter "the Hagemann patent"). Further, claims 1, 3, 5 and 10 stand rejected under 35 U.S.C. § 103(a) as being obvious over the previously-cited Great Britain Patent No. 2,077,838 to Akeroyd (hereinafter "the Akeroyd patent") in view of U.S. Patent No. 1,388,494 to Vala. Further, claim

4 stands rejected under 35 U.S.C. § 103(a) as being obvious over the Akeroyd patent in view of the Vala patent, and in further view of European Patent Application No. 318 742 to Bonaiti. Claims 6-8 stand rejected under 35 U.S.C. § 103(a) as being obvious over the Akeroyd patent in view of the Vala patent, and in further view of U.S. Patent No. 5,878,834 to Brainerd et al. (hereinafter "the Brainerd patent"). Finally, claim 9 stands rejected under 35 U.S.C. § 103(a) as being obvious over the Akeroyd patent in view of the Vala patent, and in further view of Publication No. WO 93/25822 to Nebot (hereinafter "the Nebot reference"). In view of the foregoing amendments and the following remarks, Applicant respectfully requests reconsideration of these rejections.

Independent claim 1 of the present application, as amended, is directed to a karabiner comprising a generally C-shaped body, with its free ends curved towards each other and forming a gap therebetween. A gate is positioned on one end of the body for closing the gap, and the gate includes a locking barrel thereon for locking the gate to the other end of the body. A region of the barrel overlaps the free end of the body when locking the gate in a closed position, and this region of the barrel has a greater thickness or strength on its face outward of the body when the gate is in the closed position, such that the karabiner is reinforced against inward forces applied to the gate region thereof. In addition, the barrel is slid and rotated to unlock the barrel and open the gate.

The Hagemann patent is directed to a karabiner, and this patent is in the German language. However, the figures of the patent, and especially Fig. 3, illustrate a generally C-shaped body 1 that includes a gate 4 for closing a gap between the free ends of the body. A barrel portion 22 includes a rim structure 23 that extends completely around a distal end of the barrel.

The Akeroyd patent is directed to a safety clip for a harness, including a gate member 12 pivoted on a body member 10 against the turn spring pressure. The safety clip includes a ferrule 14 carrying an extended locking portion 16, which is rotatable against spring

pressure from the locking position to a position in which the gate member can be opened inwardly. In order to prevent accidental opening of the clip, the gate member 12 is provided with a ferrule 14 formed with a longitudinal rib 15 having an extended locking portion 16, which normally lies opposite to the adjacent part 17 of the body member 10, such as to abut against it if opening pressure is applied to the gate member 12. In addition, the longitudinal rib 15 also acts as a thumb grip, but does not reinforce the barrel against side loading over a conventional barrel locking mechanism.

The Vala patent is directed to a butt hook. The Examiner appears to use the Vala patent, and especially Fig. 1, for the alleged disclosure of a barrel 7 having a region of greater thickness completely around the barrel, as compared to the other end of the barrel that is of reduced outer dimension, so as to enhance the barrel strength against inward pressure.

The Bonaiti reference is directed to a snap hook with locking sleeves. It appears that the Examiner is using the Bonaiti reference for its disclosure of a double locking barrel for adding additional security to the structure. In particular, the Bonaiti reference discloses a two-part locking barrel: one part spring-biased to a locking position, and the other part adapted to threadedly screw the lock first part in the locking position. Accordingly, multiple parts are used to actually secure the barrel with the gate closed. In addition, the Bonaiti reference locks over the gate pivot 11, but does not overlap the free end of the snap hook body. See Fig. 2.

The Brainerd patent is directed to a formed sheet metal karabiner gate. It appears that the Examiner is using the Brainerd patent for its disclosure of forming a barrel from various materials, such as carbon steel, aluminum, stainless steel and the like, such that the barrel is capable of withstanding forces of up to 25 kN. In particular, the Brainerd patent discusses the use of high-quality metals with good durability in the structure, such as stainless steels, 4130 alloy steels, titanium, aluminum, etc.

The Nebot reference is directed to a closure device in a spring hook. It appears that the Examiner is using the Nebot reference for its disclosure of a substantially solid

cylindrical gate. In particular, the Examiner believes that the use of such a solid gate would be desirable for enhanced strength.

The Examiner previously cited the Akeroyd patent, the Bonaiti reference, the Brainerd patent and the Nebot reference in an Office Action, dated August 12, 2003, to which Applicant responded with a Preliminary Amendment, accompanying the Request for Continued Examination, filed February 11, 2004. The arguments in the Remarks Section of that Preliminary Amendment, together with the descriptions, figures and attached Declaration of Mr. Pammenter, are incorporated herein by reference in their entirety. Further, the photographs that were attached to that Preliminary Amendment are also incorporated herein by reference in their entirety, and these photographs illustrate how to operate the mechanism of the present invention.

In particular, the castillation on the barrel moves freely over the free end of the karabiner body, and the barrel unit is rotated until the slot aligns with the free end of the karabiner body, and inward pressure is applied to the gate to open the karabiner, such that the free end of the karabiner passes through a slot. The barrel is thinner inwardly of the body when in an open position to permit maximum gate opening, and the pin through the free end of the gate engages with the hook formation on the free end of the karabiner when in the closed position. As illustrated in these photographs, the barrel wall has a region of thickness, and the portion of the barrel that includes this region of greater thickness is thicker outwardly when in the closed position in the region of the slot, but thinner in the opposing area, such that when rotated to open the gate, the barrel interferes to the least possible extent with the karabiner body.

Independent claim 1 has been modified through the foregoing amendment. In particular, the unlocking mechanism of the karabiner is further elucidated, such that it is expressly set forth that the barrel is slid and rotated to unlock the barrel and open the gate. This double locking action provides greater security, but does not require multiple parts to be secured, nor does it require difficult motions for the climber using the karabiner. Simply, the user

engages the barrel, slides the barrel upward, and rotates the barrel in one motion in order to unlock or lock the gate. This efficient motion, together with the other aspects of the present invention, provide additional and unique novelty thereto.

As set forth in independent claim 1, a region of the barrel, namely the end of the barrel, overlaps the free end of the body when locking the gate in a closed position. Further, and importantly, it is this region of the barrel that includes a greater thickness or strength on its face outward of the body when the gate is in the closed position. This reinforces the karabiner against inward forces applied to the gate region. In particular, this outward bolstering reinforces the karabiner against side loading, and the samples provided to the Examiner, together with the previously-filed Preliminary Amendment, illustrate this concept. A main object of the present invention is to strengthen the karabiner against these inward and sideward forces applied to the gate region, since excessive inward forces will eventually cause the gate to rupture and consequently open, and excessive side forces will not necessarily cause the gate to open, because the gate pivots inwardly (not sidewardly), but such excessive side forces may still cause the karabiner to jam. Therefore, by bolstering or providing a region of greater thickness on the gate, specifically in the particular region of the barrel that overlaps the free end of the gap, the overall strength of the gate is increased through the most critical loading angles.

Accordingly, independent claim 1 of the present application, as amended, includes three key features: (1) a region of the barrel overlaps the free end of the body when locking the gate in a closed position; (2) this region of the barrel has a greater thickness or strength on its face outward of the body when the gate is in the closed position; and (3) the barrel is slid and rotated to unlock the barrel and open the gate. None of the prior art cited by the Examiner, including the Hagemann patent, the Akeroyd patent, the Vala patent, the Bonaiti reference, the Brainerd patent and the Nebo reference, whether used alone or in combination, teach or suggest these key features. Accordingly, the present invention is both novel and non-

obvious in view of the cited prior art, as well as all of the art of record, whether used alone or in combination.

The Hagemann patent discloses a karabiner. In addition, the Hagemann patent includes a barrel that overlaps the free end of the body when locking the gate in a closed position. The Examiner suggests that the Hagemann patent discloses a karabiner having a region of a barrel with a greater thickness or strength on its face outward of the body when the gate is in the closed position. In particular, the Examiner states that “[t]he region of greater thickness 23 extends completely around the barrel....” Applicant respectfully disagrees, since the literal language of this claim says a region of “greater” thickness or strength on its face outward of the body. Therefore, such a region cannot extend all the way around, as it would not be greater than any other region opposite this bolstered region. As illustrated and discussed in detail in the previously-filed Preliminary Amendment, and as further evidenced by the samples provided to the Examiner, the region of the barrel in question must have a thickness or strength on its face outward of the body when the gate is in the closed position, and this region is “greater” than the face inward of the body, which allows for the aforementioned maximum gate-opening functionality. Further, the Hagemann patent does not disclose a barrel that is slid and rotated to unlock the barrel and open the gate, instead showing a simple spring-loaded and single-action sliding barrel.

The Akeroyd patent includes a body 10 that is generally C-shaped and a locking barrel 14. In addition, the locking member, namely the ferrule 14 includes a rib 15 and a locking portion 16, which is configured to slide past the part 17 until the fully closed position is reached. Accordingly, the region of the barrel that overlaps the free end of the body of the device of the Akeroyd patent, namely part 16, does not have a greater thickness or strength on its face outward of the body when the gate is in the closed position. In fact, the thickness of part 16 (and/or rib 15) is roughly the same as the thickness of the wall of the barrel body 14. Still further, in order

to lock and unlock the barrel of the Akeryod patent, the barrel is not slid and rotated to unlock the barrel and open the gate.

With respect to the Vala patent, and as with the Hagemann patent, the device of the Vala patent includes a uniformly thick barrel that is slid over the free end of the C-shaped body. Again, as admitted by the Examiner, the barrel 7 has a region of thickness that completely surrounds the barrel. Therefore, the device of the Vala patent does not include a region of the barrel that overlaps the free end of the body, where this region of the barrel has a greater thickness or strength on its face outward of the body. Again, this region is not “greater” than the inward portion of the barrel. Still further, as with the previous references, the barrel of the butt hook of the Vala patent is merely slid to lock and unlock the gate, and is not rotated in a double locking motion.

The Bonaiti reference does illustrate a double-locking barrel 19, 14. However, the device of the Bonaiti reference includes two parts, one which is spring-biased and the other which is screw-threaded, in order to obtain a locking position. Therefore, the locking requires two motions, as opposed to the simple sliding and rotating of the locking mechanism of the present invention. Still further, the barrel of the Bonaiti reference locks over the gate pivot 11, and does not overlap the free end of the karabiner body. Still further, the barrel of the Bonaiti reference does not include a region of greater thickness or strength from its face outward of the body when the gate is in the closed position.

The Brainerd patent is deficient in the same respects. For example, the device of the Brainerd patent does not include a region of the barrel overlapping the free end of the body, where this region has a greater thickness or strength on its face outward of the body. In addition, the simple swinging gate structure of the device of the Brainerd patent does not teach or suggest the use of a sliding and rotating barrel to unlock the barrel and open the gate.

Finally, the Nebot reference, which is written in Spanish, is only used by the Examiner to teach a solid gate. The Nebot reference does not teach a karabiner or hook that

includes a region of the barrel overlapping the free end of the body when locking the gate in a closed position, where this region of the barrel has a greater thickness or strength on its face outward of the body when the gate is in a closed position. In addition, the barrel of the hook of the Nebot reference is not slid and rotated to unlock the barrel and open the gate.

Accordingly, all of the Hagemann patent, Akeroyd patent, Vala patent, Bonaiti reference, Brainerd patent, Nebot reference, as well as the remaining art of record, whether used alone or in combination, do not teach or suggest a karabiner as shown, described and set forth in independent claim 1 of the present application, as amended. Namely, none of these references teach or suggest a karabiner that includes a region of the barrel overlapping the free end of the body when locking the gate in a closed position, where this region of the barrel has a greater thickness or strength on its face outward of the body when the gate is in a closed position, and the barrel is slid and rotated to unlock the barrel and to open the gate. Further, none of these references teach the unique locking and unlocking mechanism of the karabiner of the present invention, as explicitly illustrated in Figs. 1-4 of the present application.

Still further, and as discussed in the previously-filed Preliminary Amendment, and as set forth in MPEP § 2143.03, to establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. It is improper for the Examiner to use the claims as a blueprint for locating separate claim elements in separate prior art references without considering the teachings of the prior art as a whole and without considering the complete teachings of the separate references. Even if combined, the cited prior art does not yield a karabiner that includes the key features of the present invention. Accordingly, the combination of these references would yield a structure that is unworkable and non-obvious in view of the present invention.

For the foregoing reasons, independent claim 1 of the present application, as amended, is not anticipated by or rendered obvious over the Hagemann patent, Akeroyd patent,

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Vala patent, Bonaiti reference, Brainerd patent, Nebot reference, nor any of the prior art of record, whether used alone or in combination. There is no hint or suggestion in any of the references cited by the Examiner to combine these references in a manner which would render the invention, as claimed, obvious. Reconsideration of the rejections of independent claim 1 is respectfully requested.

Claims 2-10 depend either directly or indirectly from and add further limitations to independent claim 1 and are believed to be allowable for the reasons discussed hereinabove in connection with independent claim 1. Therefore, for all the above reasons, reconsideration of the rejections of claims 2-10 is respectfully requested.

For all the foregoing reasons, Applicant believes that claims 1-10, as amended, are patentable over the cited prior art and in condition for allowance. Reconsideration of the rejections and allowance of all pending claims 1-10 are respectfully requested.

Respectfully submitted,

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